

REMARKS

Status of the Claims

Claims 1-20 are pending in the application. In the present Amendment, claims 1, 4, 5, 7, 14 and 15 have been amended and new claims 16-21 have been added. Support for these new and amended claims can be found throughout the specification and the originally filed claims. Applicant has not introduced any new matter by the amendments.

Rejections Under 35 U.S.C. § 102(b)

Claims 1-3, 5, 6, and 8-15 were rejected under 35 U.S.C. § 102(b) as being anticipated by Shi (US 5,998,184).¹ Applicant respectfully traverses this rejection.

A *prima facie* case of anticipation requires that a single publication teach, either expressly or inherently, each and every element or limitation of the claim, including any functional limitations. M.P.E.P. § 2131. The beads of the claimed invention are coated with at least one antibody material to capture target microorganisms. Shi does not disclose antibody-coated beads.

Instead, Shi discloses a basket bioreactor that may contain microcarriers coated with proteins such as fibronectin. These microcarriers provide sites of attachment for adherent hybridoma cells, which can thus be grown to higher densities in the bioreactor due to the increased surface area. See, e.g., Shi, Col. 7, lines 59-64. The adherent hybridoma cells secrete antibodies for subsequent isolation. However, since none of the Shi microcarriers are coated with antibodies, they cannot capture target

¹ U.S. Patent No. 5,998,184 to Shi was filed on October 8, 1997, and issued on December 7, 1999. The present application properly claims priority to U.S. Provisional Application No. 60/097,627, filed August 24, 1998. Accordingly, Shi does not qualify as prior art under 35 U.S.C. § 102(b).

microorganisms as recited in the claimed inventions. Clearly, Shi discloses a completely different device than claimed by the Applicant and does not teach or suggest either the claimed device or method.

Accordingly, since Shi does not anticipate each element of claims 1-3, 5, 6, and 8-15, Applicant respectfully requests that this rejection be withdrawn.

Rejections Under 35 U.S.C. § 103(a)

Claims 4 and 7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bradley Shi (US 5,998,184) in view of Kadouri et al. (US 5,705,390). Applicant respectfully traverses the rejection.

A *prima facie* case of obviousness has three distinct requirements. First, the references must teach or suggest every claim element. M.P.E.P. §§ 2142 and 2143.03. Second, there must be a motivation to modify or combine the teachings of the cited references. M.P.E.P. §§ 2143 and 2143.01. Third, there must be a reasonable expectation of success in performing the modified or combined teachings of the references. M.P.E.P. § 2143.02.

Claims 4 and 7 indirectly recite a plurality of beads coated with at least one antibody material to capture target microorganisms. As stated above, Shi does not teach or suggest a device for capturing and separating target microorganisms comprising a plurality of beads coated with at least one antibody material to capture target microorganisms. Nor does Kadouri et al. In fact, Kadouri et al. suffers from the same defects as Shi. Kadouri et al. discloses a bioreactor for growing cells. It never mentions nor hints at coating beads with antibodies.

Accordingly, any combination of Shi with Kadouri et al. would still fall short of the claimed inventions. Withdrawal of this rejection is therefore requested.

Conclusions

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims. If the Examiner has any questions regarding this Amendment and Response, he is invited to contact the undersigned at 202-408-4116.

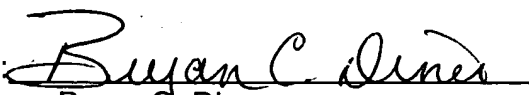
Please grant any extensions of time required to enter this response and charge any additional required fees to our Deposit Account No. 06-0916.

Respectfully submitted,

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By:


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